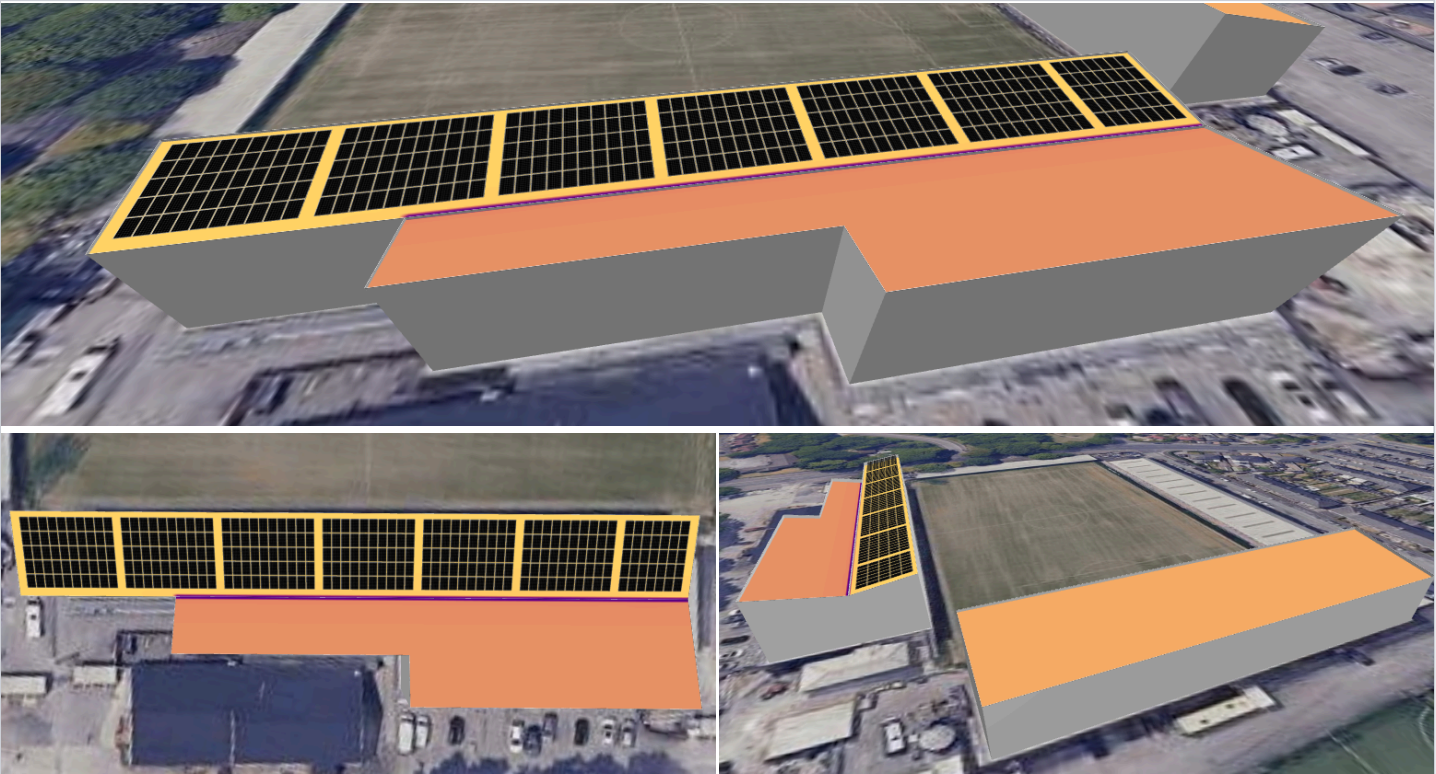


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SYSTEM OVERVIEW

 335 PV modules

 5 Inverters

 168 Optimizers

 3 Batteries

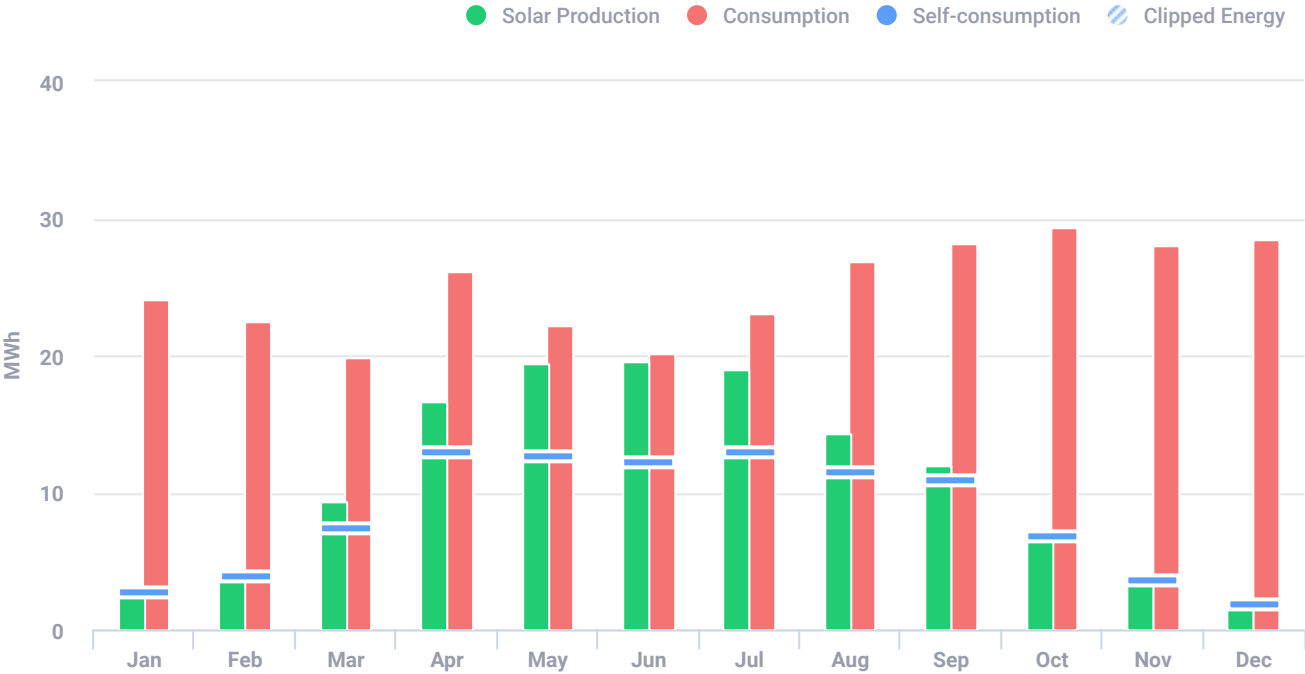
SIMULATION RESULTS

 Installed DC Power 150.75 kWp	 Max Achieved AC Power 133.20 kW	 Annual Energy Production 129.55 MWh	 CO2 Emission Saved (Annually) 25.05 t	 Equivalent Trees Planted (Annually) 1,151
 Max Achieved DC Power 139.82 kW	 DC/AC Oversizing 86 %	 Max Active AC Power 133.20 kW	 Performance Ratio 91 %	 Performance Index 859 kWh/kWp

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ESTIMATED MONTHLY ENERGY



Total clipped energy: 0.02% | Clipped Energy Without Smart Battery: 0.02%

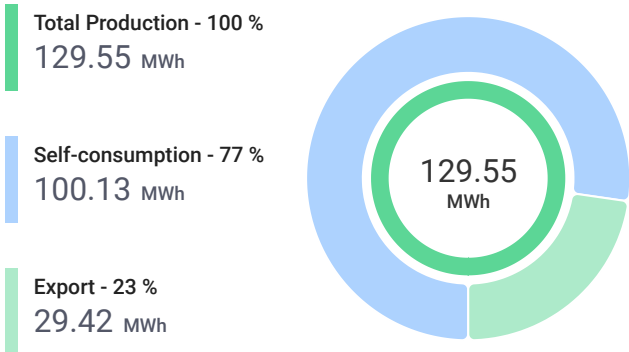
Month	Solar Production (kWh)	Consumption (kWh)	Self-consumption (kWh)	Clipped Energy (kWh)
Jan	2,806	24,075	2,806	-
Feb	3,952	22,420	3,951	-
Mar	9,276	19,876	7,480	-
Apr	16,608	26,156	12,972	-
May	19,452	22,233	12,633	-
Jun	19,608	20,142	12,284	-
Jul	18,986	23,039	13,013	31
Aug	14,237	26,890	11,540	-
Sep	11,936	28,118	11,018	-
Oct	7,183	29,394	6,924	-
Nov	3,611	28,101	3,611	-
Dec	1,898	28,421	1,898	-

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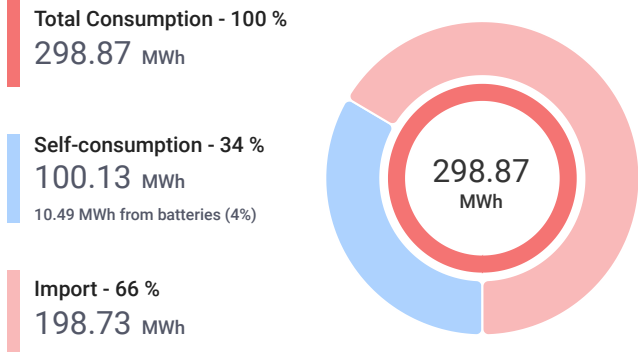
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SYSTEM PRODUCTION



CONSUMPTION



SIMULATION PARAMETERS



Time zone	BST (London)
Weather station	Bradford (30.3 km away)
Station altitude	218 m
Station data source	Meteonorm 7.1
Grid	400V L-L, 230V L-N



Near shading	Enabled
Albedo	0.20
Bi-Facial Albedo	0.30
Soiling/Snow	0%
Incidence angle modifier (IAM), ASHRAE b0 param.	0.05
Thermal loss factor Uc (const) Flush mount	20
Thermal loss factor Uc (const) Tilted	29
LID loss factor	0%
System unavailability	0%

FINANCIAL OVERVIEW

Net Payments	Lifetime Bill Savings (NPV)	System Profit (NPV)	Internal Return Rate (IRR)	Payback Period
£ 105,525	£ 1,490,412	£ 1,384,887	59.5 %	1.8 years

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ESTIMATED BILL SAVINGS YEAR 1

Annual			
Current Annual Bill	Annual Bill with SolarEdge	Net Bill Annual Savings	Bill Offset
£ 175,433.76	£ 116,657.29	£ 58,776.47	33.5 %

Estimated Net Lifetime Bill Savings

£ 1,490,412

Utility Provider: UK Energy Firm | Utility Rate: UK Energy Firm Rate (0.587 £/kWh)

	Current Monthly Bill	Monthly Bill with SolarEdge	Net Bill Monthly Savings	Bill Offset
Jan	£14,132.03	£12,484.69	£1,647.33	11.66%
Feb	£13,160.54	£10,841.34	£2,319.20	17.62%
Mar	£11,667.21	£7,276.41	£4,390.80	37.63%
Apr	£15,353.57	£7,738.76	£7,614.81	49.6%
May	£13,050.77	£5,634.93	£7,415.84	56.82%
Jun	£11,823.35	£4,612.93	£7,210.42	60.98%
Jul	£13,523.89	£5,885.15	£7,638.74	56.48%
Aug	£15,784.43	£9,010.26	£6,774.17	42.92%
Sep	£16,505.27	£10,037.89	£6,467.37	39.18%
Oct	£17,254.28	£13,190.03	£4,064.25	23.56%
Nov	£16,495.29	£14,375.83	£2,119.46	12.85%
Dec	£16,683.13	£15,569.07	£1,114.06	6.68%
Total:	£175,433.76	£116,657.29	£58,776.47	

ROCHDALE AFC

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DETAILED FINANCIAL ANALYSIS

System Price	Maintenance Cost (NPV)	Returns from Incentives (NPV)	Net Payments	Lifetime Bill Savings (NPV)
£ 105,525	£ N/A	£ N/A	£ 105,525	£ 1,490,412
System Profit (NPV)	Internal Return Rate (IRR)	Return Of Investment (ROI)	Levelized Cost Of Energy (LCOE)	Payback Period
£ 1,384,887	59.5 %	1,312.38 %	£/kWh 0.052	1.8 years



YEARLY CASH FLOW

# Year	System Price	Net Bill Savings	Annual Cash Flow	Cumulative Cash Flow
0	£ -105,525.00	£ 0.00	£ -105,525.00	£ -105,525.00
1		£ 58,776.47	£ 58,776.47	£ -46,748.53

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YEARLY CASH FLOW (CONTINUED)

# Year	System Price	Net Bill Savings	Annual Cash Flow	Cumulative Cash Flow
2		£ 61,010.09	£ 61,010.09	£ 14,261.55
3		£ 63,327.74	£ 63,327.74	£ 77,589.30
4		£ 65,733.27	£ 65,733.27	£ 143,322.57
5		£ 68,229.76	£ 68,229.76	£ 211,552.33
6		£ 70,820.99	£ 70,820.99	£ 282,373.32
7		£ 73,510.69	£ 73,510.69	£ 355,884.01
8		£ 76,301.52	£ 76,301.52	£ 432,185.53
9		£ 79,197.74	£ 79,197.74	£ 511,383.27
10		£ 82,203.37	£ 82,203.37	£ 593,586.64
11		£ 85,323.03	£ 85,323.03	£ 678,909.67
12		£ 88,560.63	£ 88,560.63	£ 767,470.30
13		£ 91,921.14	£ 91,921.14	£ 859,391.45
14		£ 95,408.54	£ 95,408.54	£ 954,799.99
15		£ 99,028.05	£ 99,028.05	£ 1,053,828.04
16		£ 102,784.78	£ 102,784.78	£ 1,156,612.82
17		£ 106,683.34	£ 106,683.34	£ 1,263,296.16
18		£ 110,729.75	£ 110,729.75	£ 1,374,025.91
19		£ 114,929.02	£ 114,929.02	£ 1,488,954.94
20		£ 119,286.91	£ 119,286.91	£ 1,608,241.85
21		£ 123,809.19	£ 123,809.19	£ 1,732,051.04
22		£ 128,503.07	£ 128,503.07	£ 1,860,554.11
23		£ 133,374.63	£ 133,374.63	£ 1,993,928.74
24		£ 138,429.37	£ 138,429.37	£ 2,132,358.12
25		£ 143,674.36	£ 143,674.36	£ 2,276,032.48
Total:		£ 2,381,557.48	£ 2,276,032.48	

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STORAGE

23kWh SolarEdge Home Battery (48V) x 3
Smart Battery Management

Self-consumption

34%

4% from batteries

Total Storage Capacity

69 kWh



Backup Time from Batteries
Only

2 hr

100% Backed Up

Backup Time from Batteries
& PV

3 hr

100% Backed Up

WHAT YOU CAN POWER



or



or



or



or



or



19hr

15+ Days

46hr

28+ Days

345km

19+ Days

PV MODULES

# Module	Model	Peak power	Racking type	Orientation	Azimuth	Tilt
335	JinkoSolar Holding Co. Ltd., JKM-450N-54HL4R-V Tiger Neo N-Type	150.8 kWp			171°	10°
Total: 335		150.8 kWp				

BILL OF MATERIALS (BOM)

Items	Part Number	Quantity	Price (£)	Total (£)
Base Price per W (DC)		150750	0.70	105,525.00
SE66.6K Synergy Manager		2		
SE10K-RWB48 Home Hub		3		
P950		168		
23kWh SolarEdge Home Battery (48V) SolarEdge Home Battery 48V - 5 x 4.6kWh module	BAT-05K48M0B-02	3	0.00	0.00

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BILL OF MATERIALS (BOM) (CONTINUED)

Items	Part Number	Quantity	Price (£)	Total (£)
 JKM-450N-54HL4R-V Tiger Neo N-Type		335		
 SolarEdge Smart Meter with G100 1PH/3PH 230/400V, Energy Meter with Modbus Connection, DIN-Rail	SE-WND-3Y400-MB-K2	1		
 Firefighter Gateway Immediately stops production of PV system through fire alarm control panel.	SE1000-CCG-F-S1	1		
Total Price: £ 105,525.00				

ELECTRICAL DESIGN

Inverters & Storage	Strings per inverter	Optimizers per string	PV modules per string
 1 xSE66.6K Synergy Manager Center Unit 70.12kW 105% Oversizing	3 x strings	 14 x P950 (2:1)	 28
Left Unit			
	3 x strings	 14 x P950 (2:1)	 28
 1 xSE66.6K Synergy Manager Center Unit 69.7kW 105% Oversizing	3 x strings	 14 x P950 (2:1)	 28
Left Unit			
	2 x strings	 14 x P950 (2:1)	 28
	1 x string	 13 x P950 (2:1), 1 x P950 (1:1)	 27
 3 xSE10K-RWB48 Home Hub 0kW 0% Oversizing 1 x 23kWh SolarEdge Home Battery (48V)			

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SYSTEM LOSS DIAGRAM

